IKEGUCHI Q65291
METHOD OF CONTROLLING AN ELECTR[illegible]C
CAM TYPE ROTARY CUTTER, AND MET[illegible]
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FIG. 1

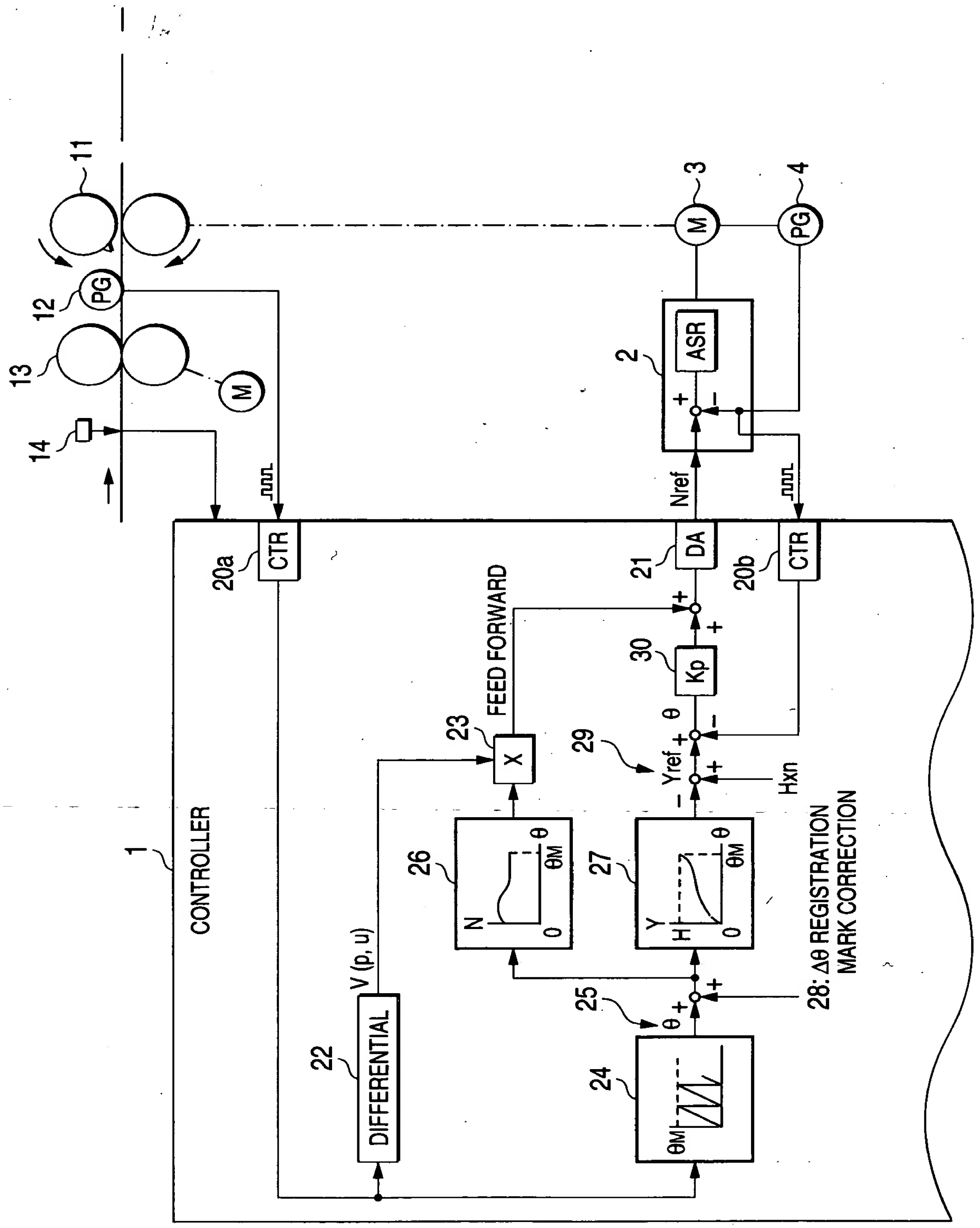

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FIG. 2

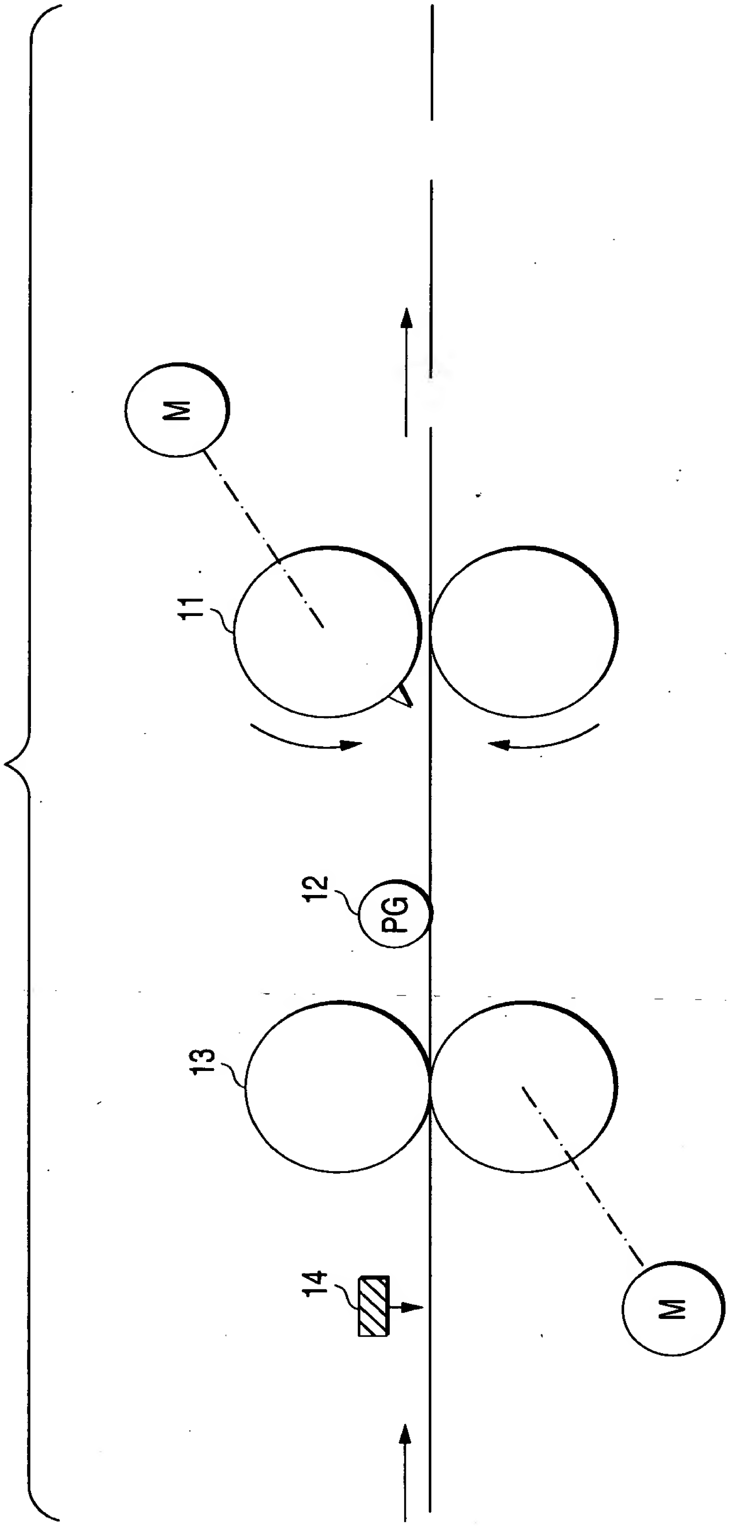

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FIG. 3A

STRAIGHT BLADE

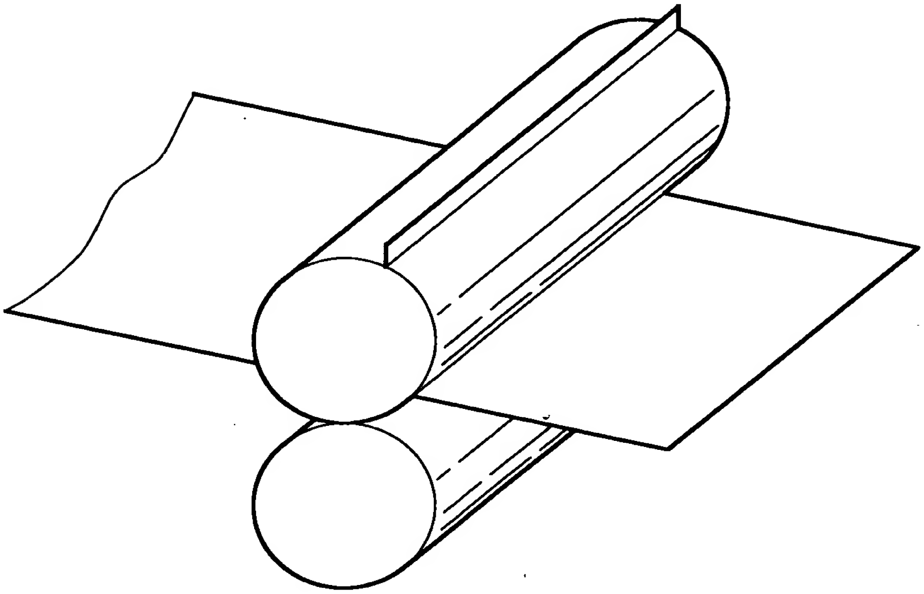

FIG. 3B

SPIRAL BLADE

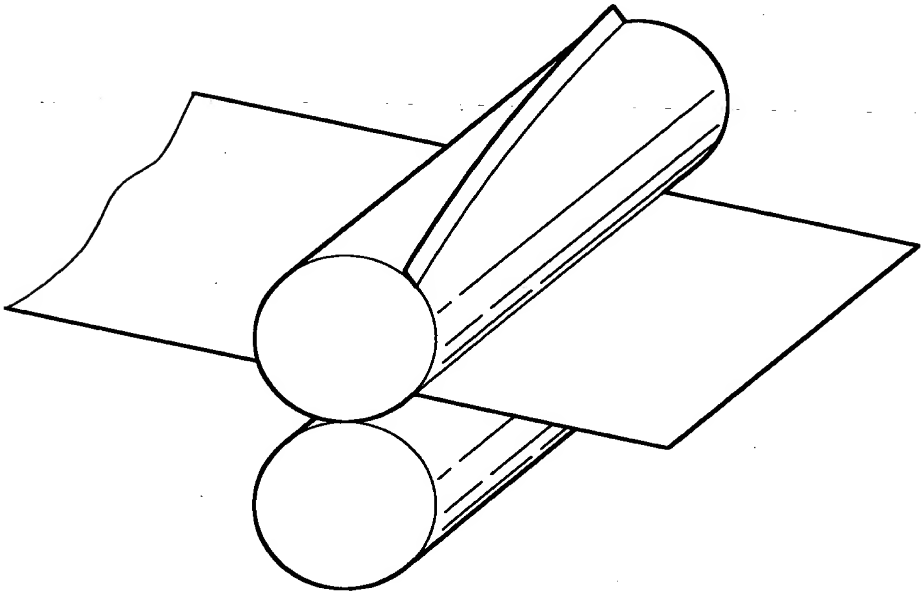

FIG. 4A

SINGLE BLADE

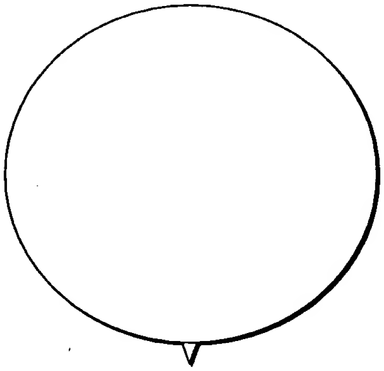

FIG. 4B

DOUBLE BLADE

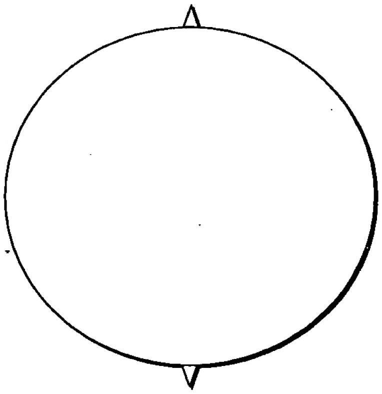

FIG. 4C

TRIPLE BLADE

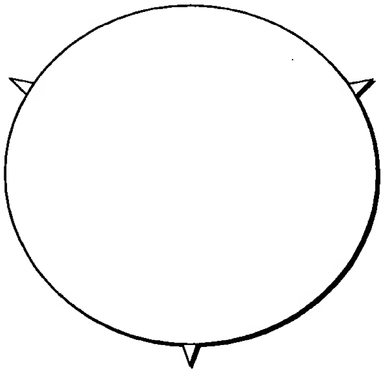

FIG. 4D

QUADRUPLE BLADE

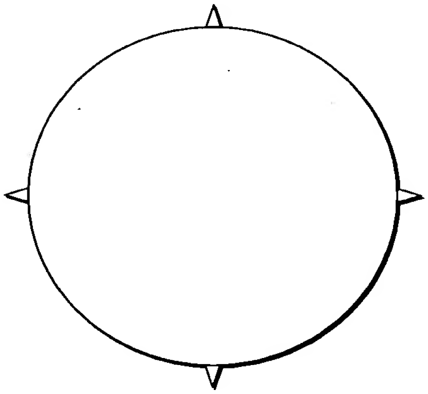

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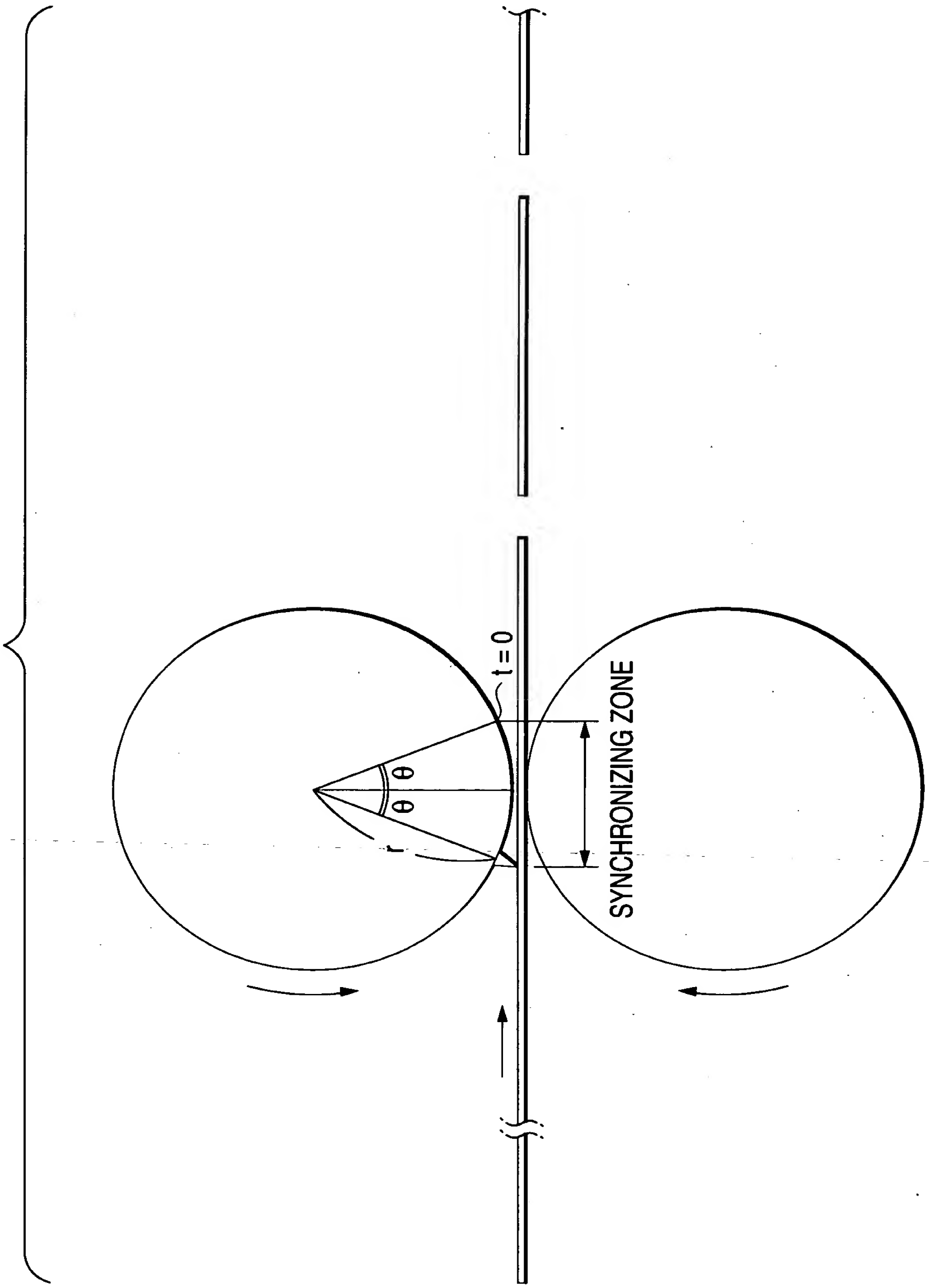
FIG. 5



[CASE OF SPIRAL BLADE]

FIG. 6A

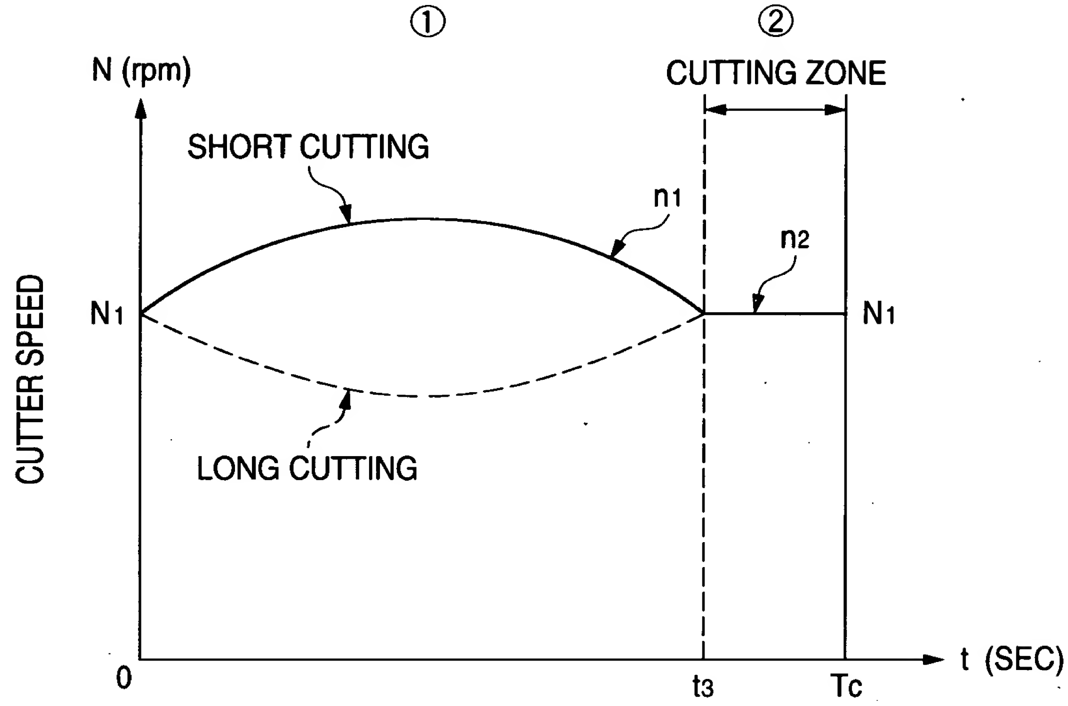


FIG. 6B

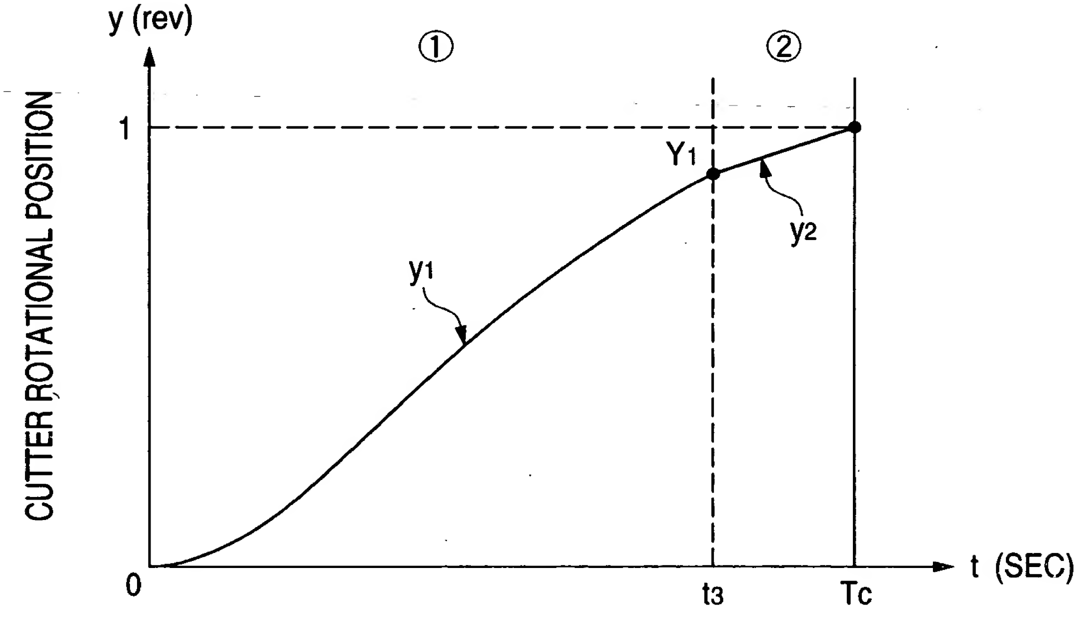


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FIG. 7A

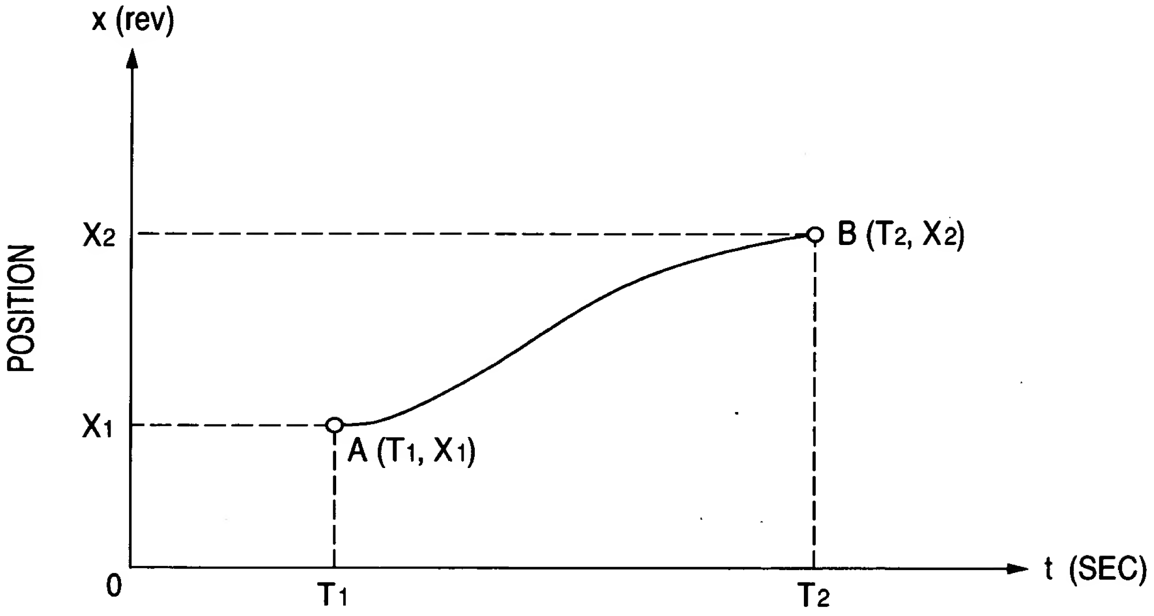

FIG. 7B

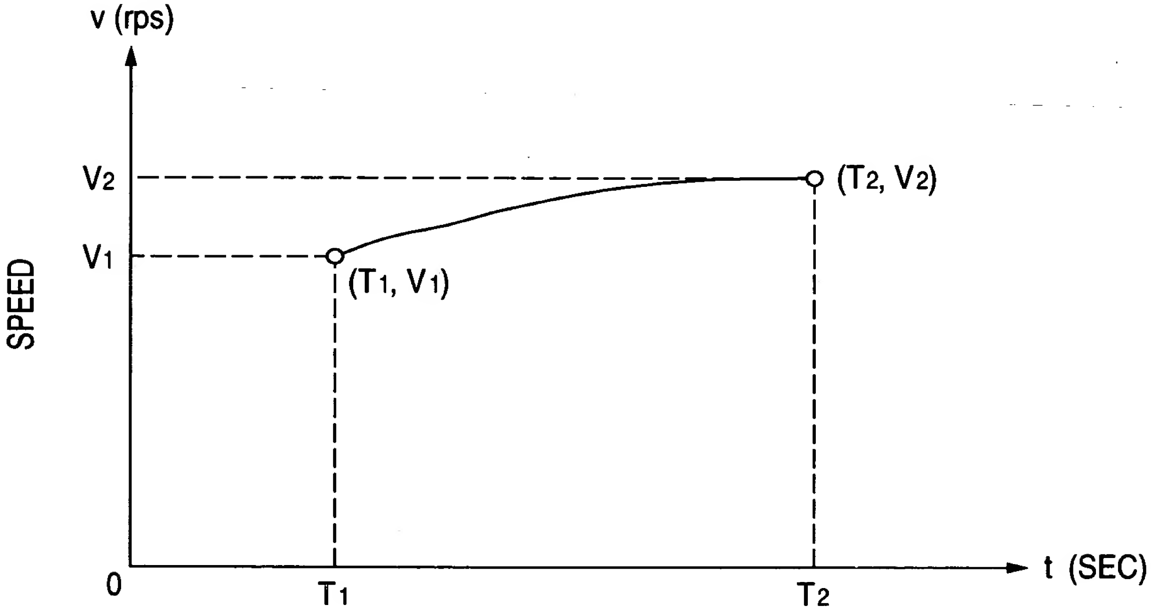

FIG. 8

(CAM CURVE EQUATIONS OF SPIRAL BLADE)

ZONE	CUTTER ROTATIONAL SPEED n (rpm)	CUTTER ROTATIONAL POSITION y (rev)
①	$n_1 = 60\,(3At^2 + 2Bt + C)$	$y_1 = At^3 + Bt^2 + Ct + D$
②	$n_2 = N_1$	$y_2 = \frac{(1 - Y_1)}{(Tc - t_3)}\,(t - Tc) + 1$

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[CASE OF STRAIGHT BLADE]

FIG. 9A

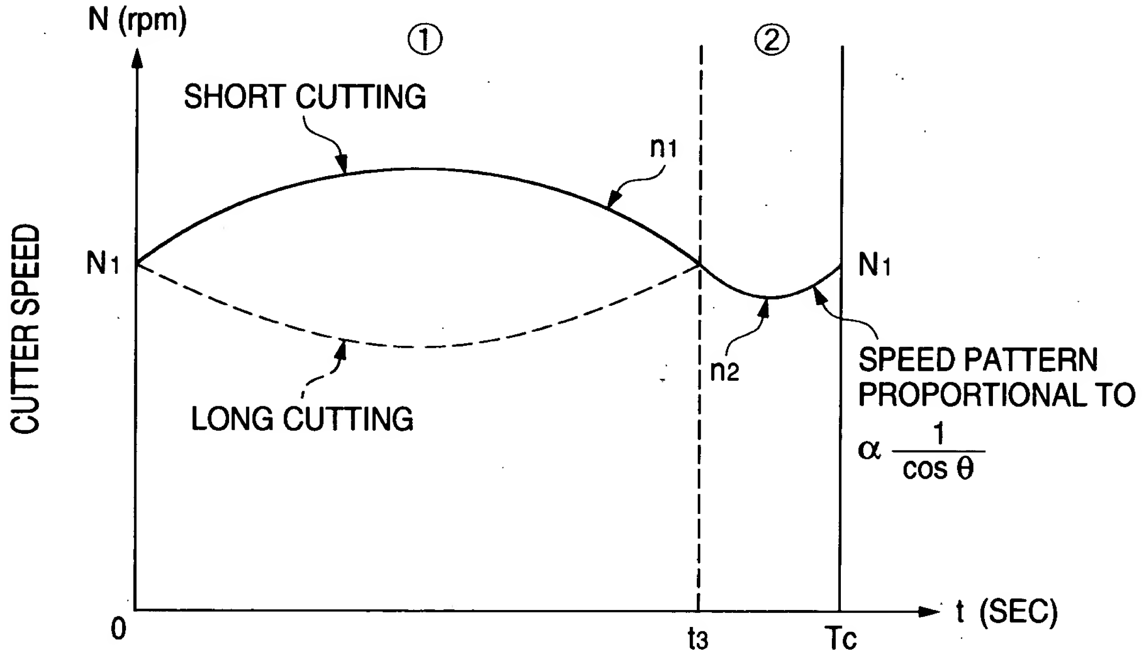

FIG. 9B

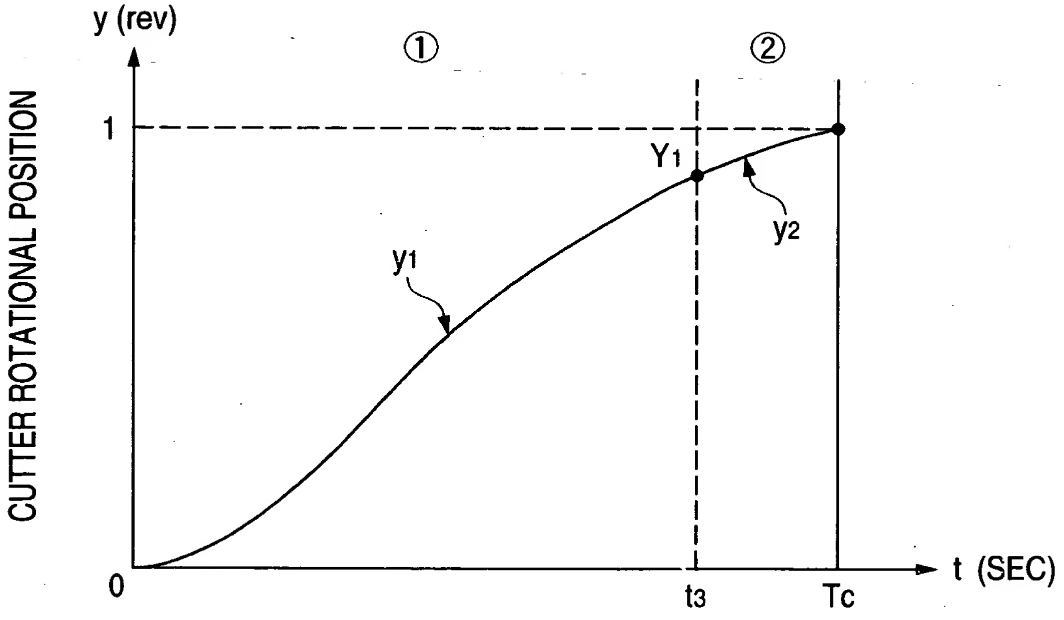

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FIG. 10

(CAM CURVE EQUATIONS OF STRAIGHT BLADE)

ZONE	CUTTER ROTATIONAL SPEED n (rpm)	CUTTER ROTATIONAL POSITION y (rev)
①	$n_1 = 60\,(3At^2 + 2Bt + C)$	$y_1 = At^3 + Bt^2 + Ct + D$
②	$n_2 = \dfrac{60}{2\pi\sqrt{(\frac{r}{V_0})^2 - (t - \frac{t_3 + T_c}{2})^2}}$	$y_2 = \dfrac{1}{360}\sin^{-1}\{(\frac{V_0}{r})(t - \frac{t_3 + T_c}{2})\} + G$ $\left(\begin{array}{l} G = 1 - \frac{\theta_0}{360} \\ \text{UNIT OF } \sin^{-1} x\text{: } (^\circ) \end{array}\right)$

FIG. 11A

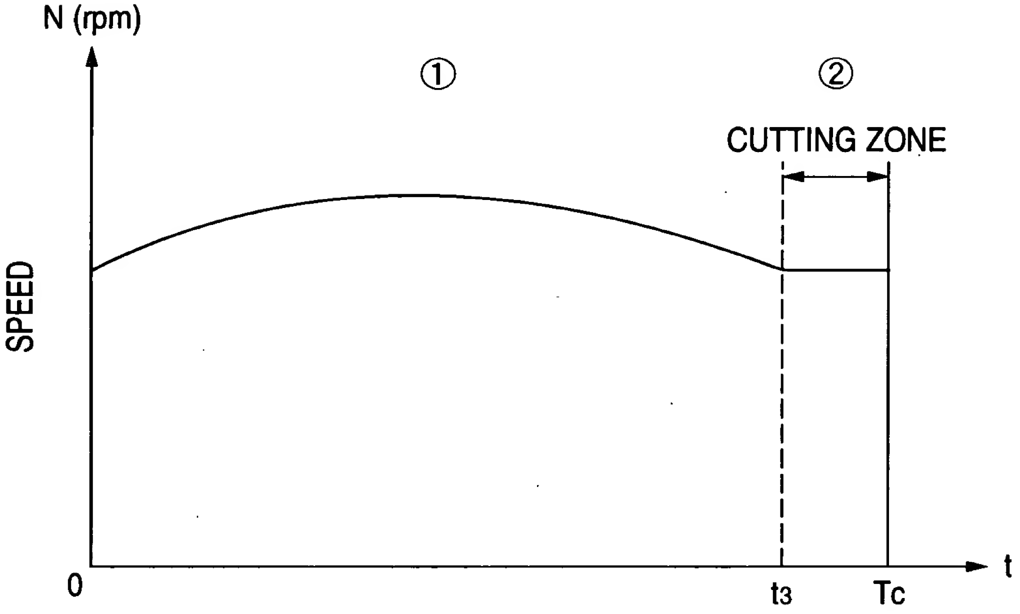

FIG. 11B

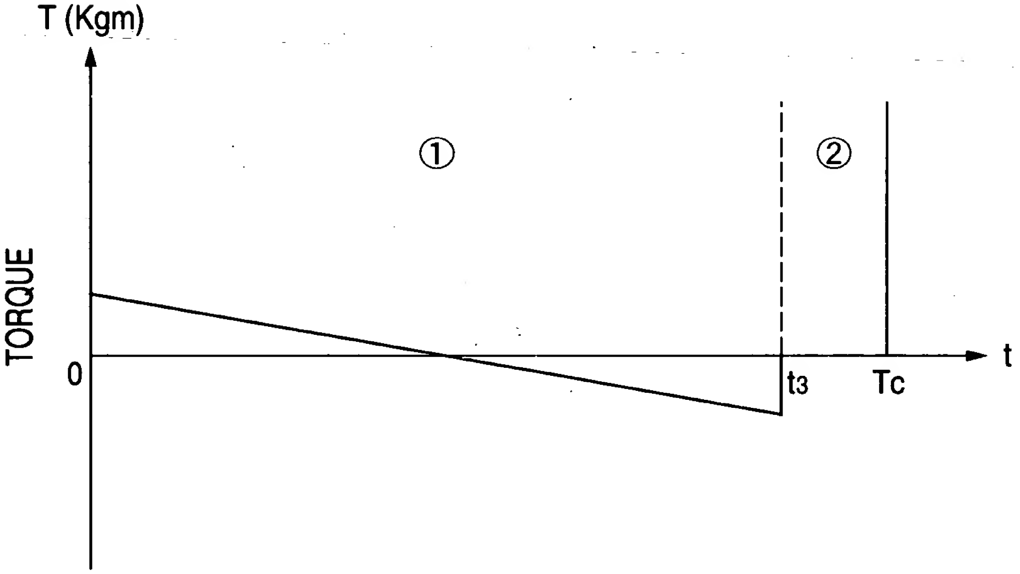

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FIG. 12A

[SPEED PATTERN OF QUADRATIC FUNCTION WAVEFORM]

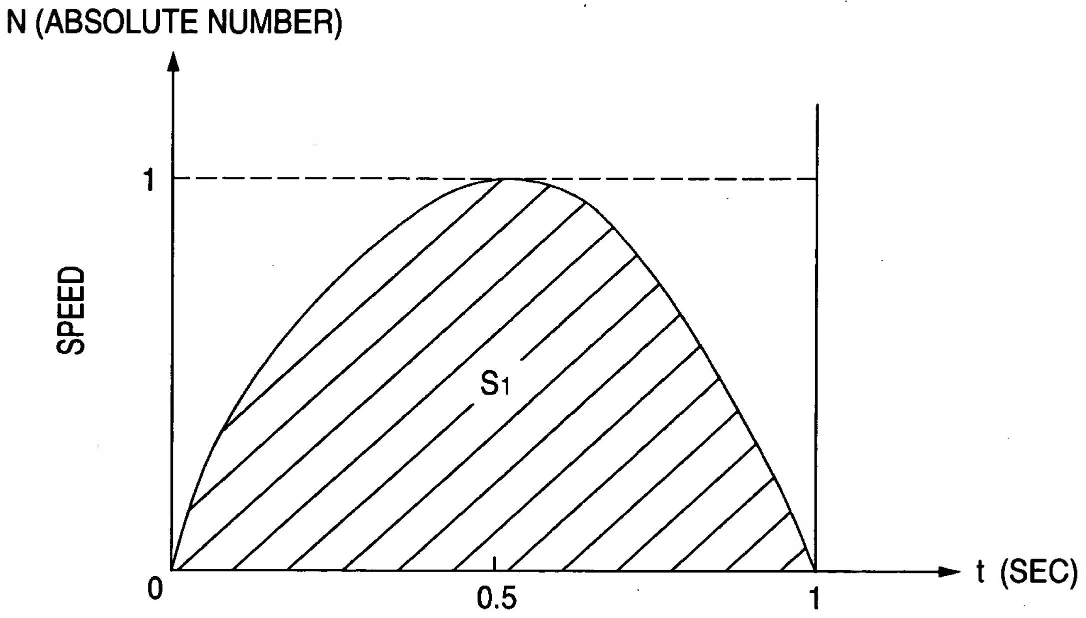

FIG. 12B

[SPEED PATTERN OF TRAPEZOIDDAL WAVEFORM]

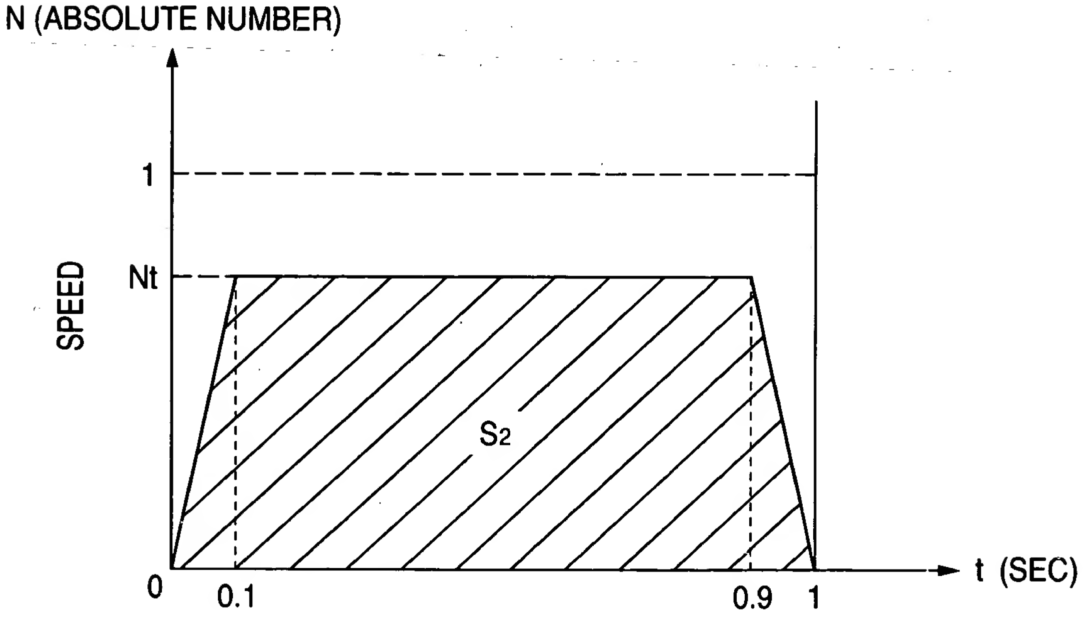

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FIG. 13A

[SPEED PATTERN OF GENERALIZED TRAPEZOIDAL WAVEFORM]

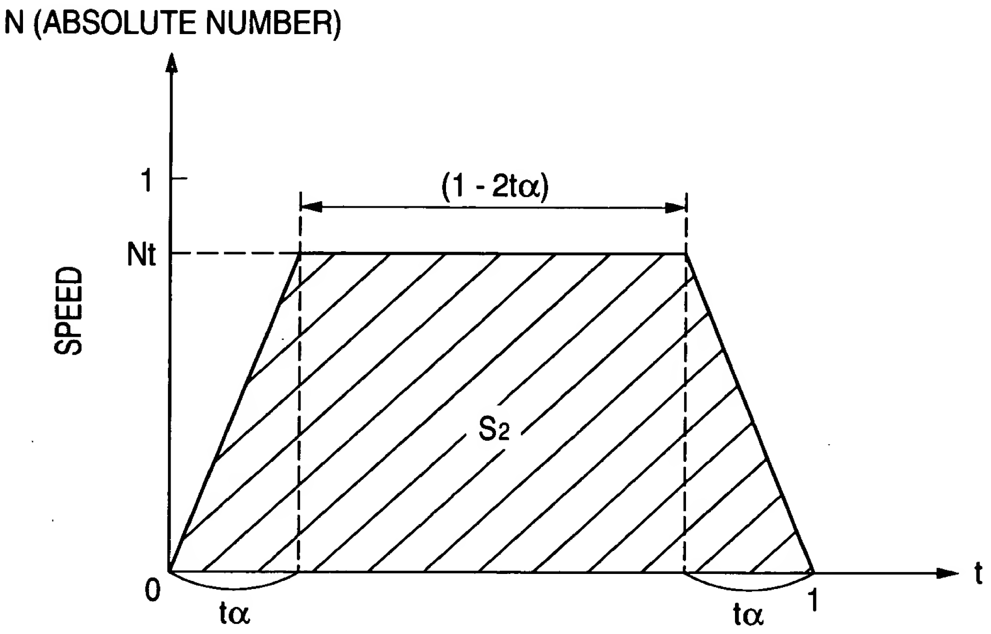

FIG. 13B

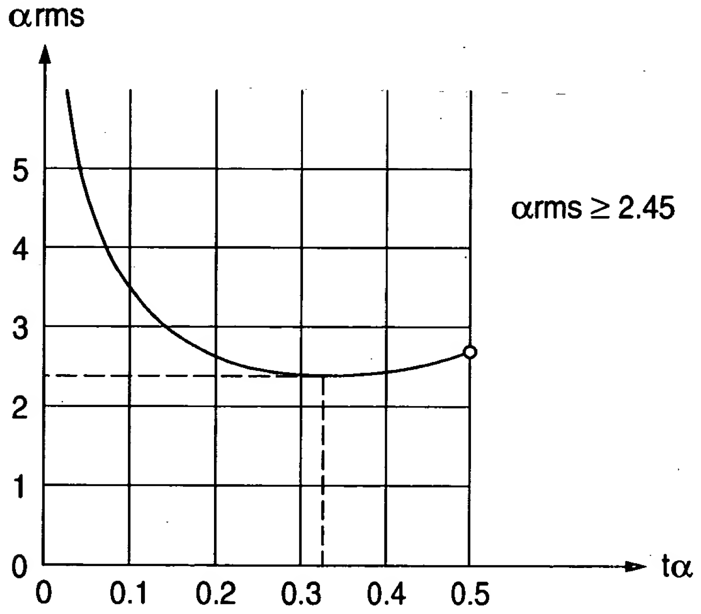

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FIG. 14

LV CURVE

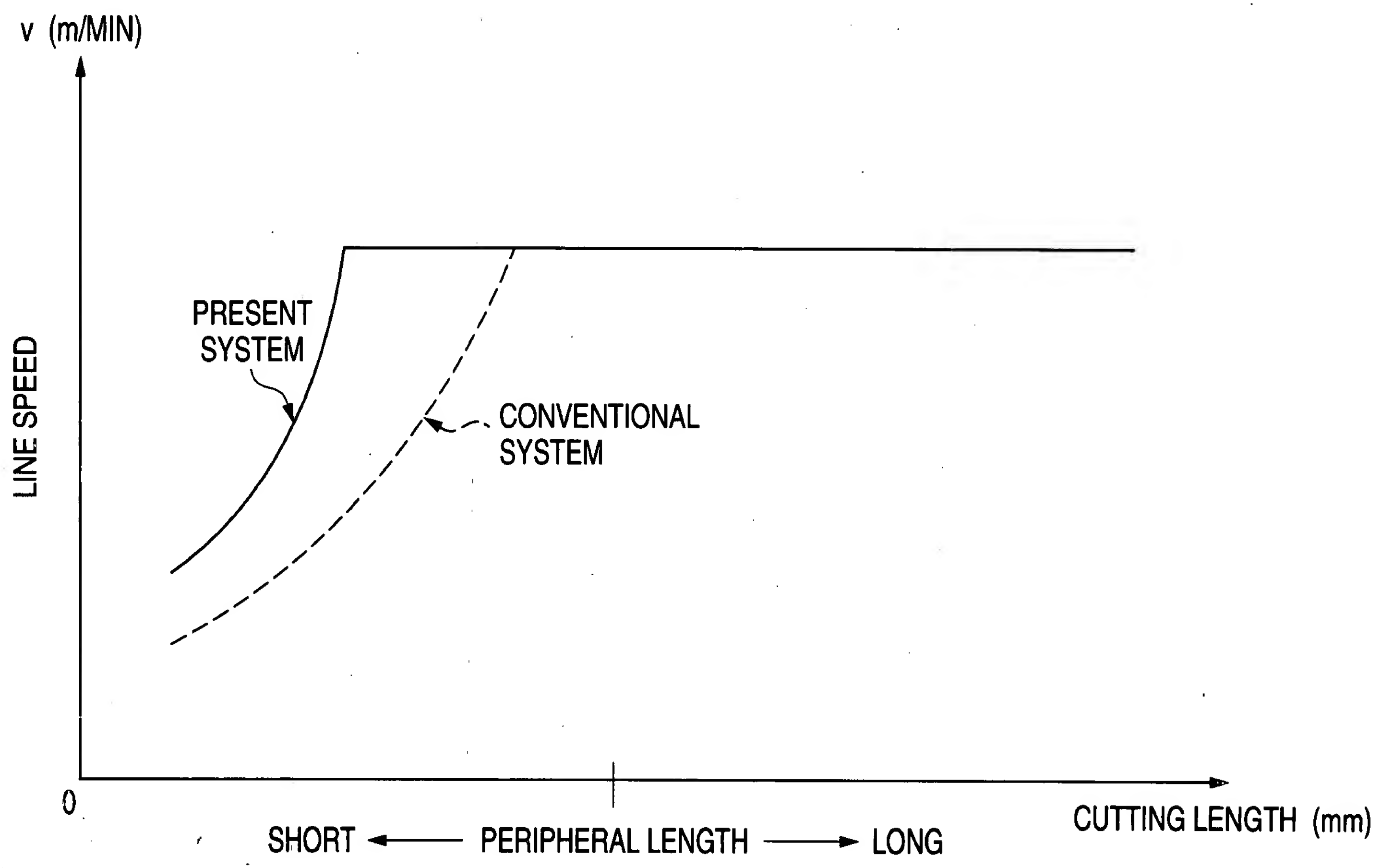

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FIG. 15

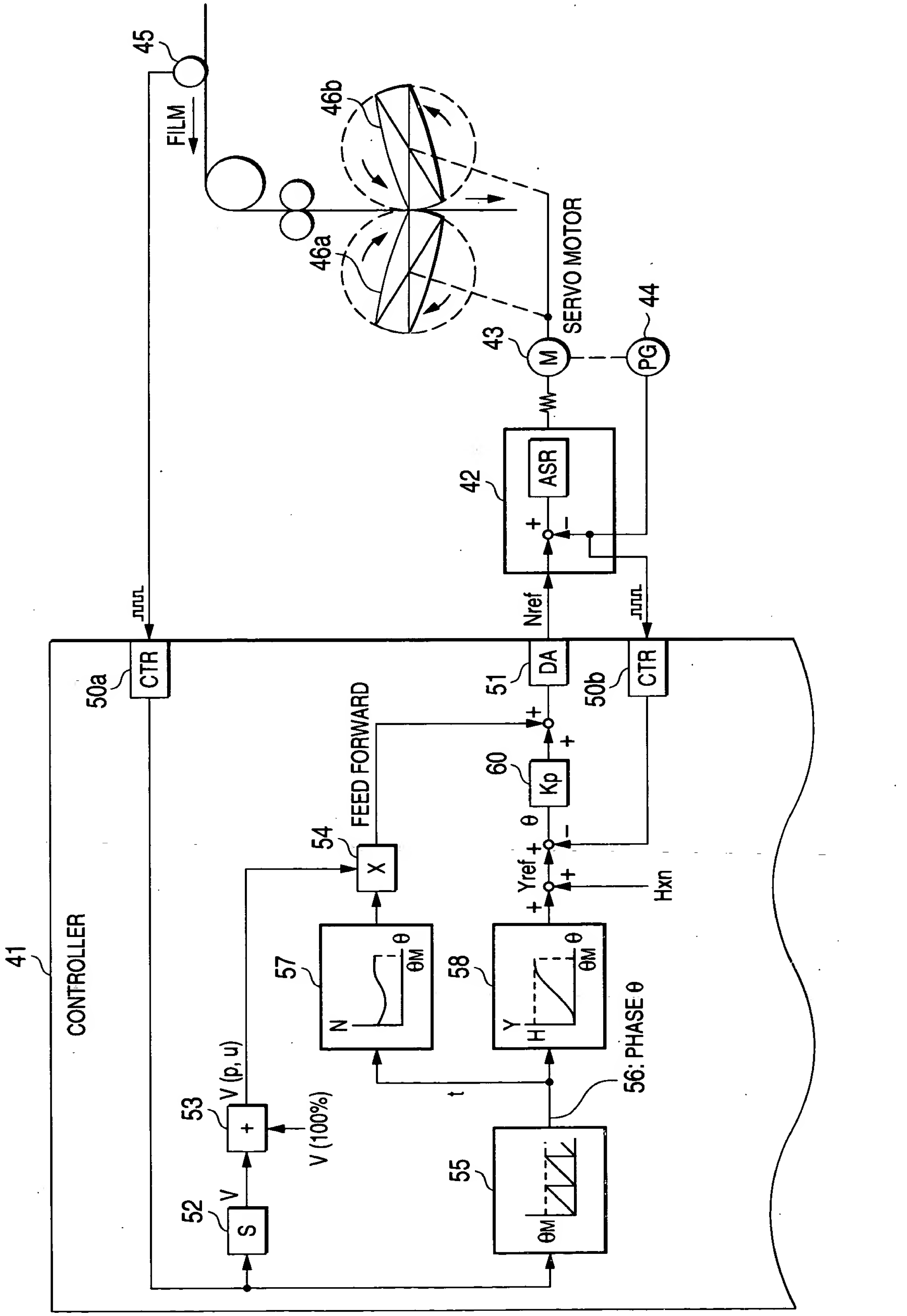

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FIG. 16A [SINGLE HEATER LATERAL SEALING MECHANISM]

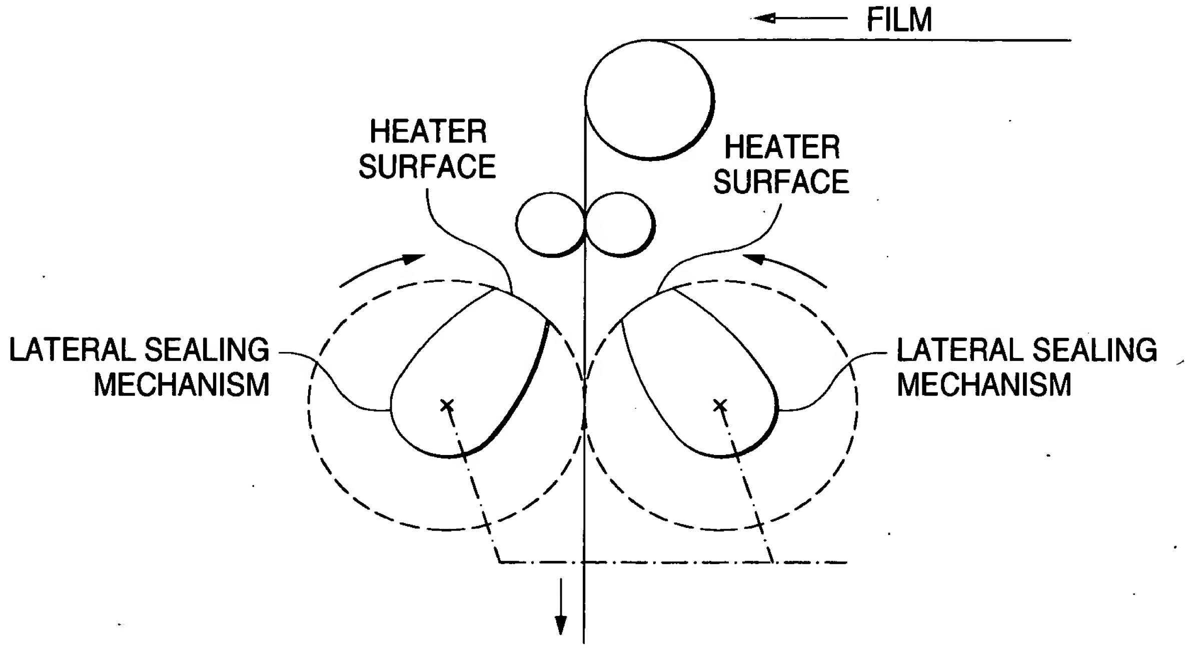

FIG. 16B [DOUBLE HEATER LATERAL SEALING MECHANISM]

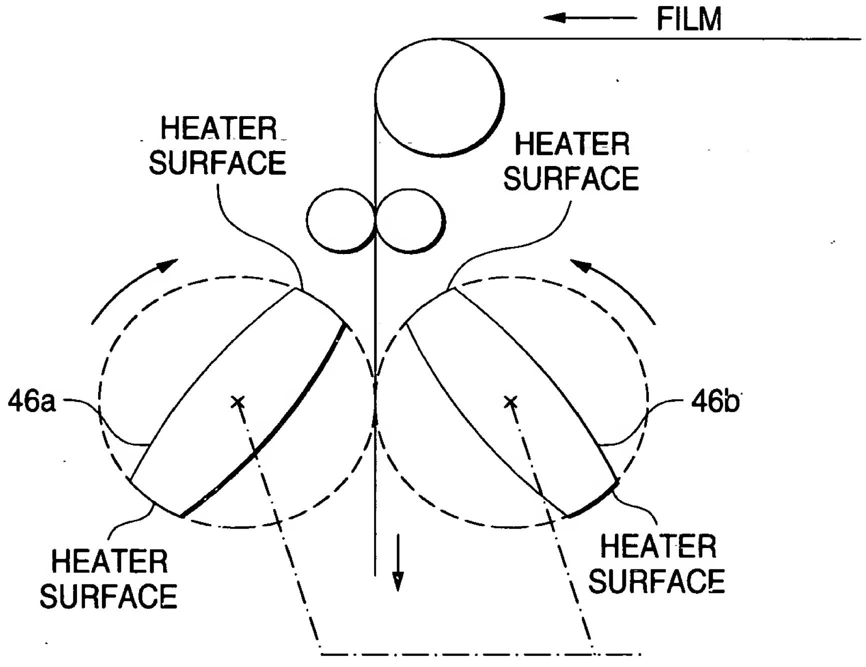

FIG. 17

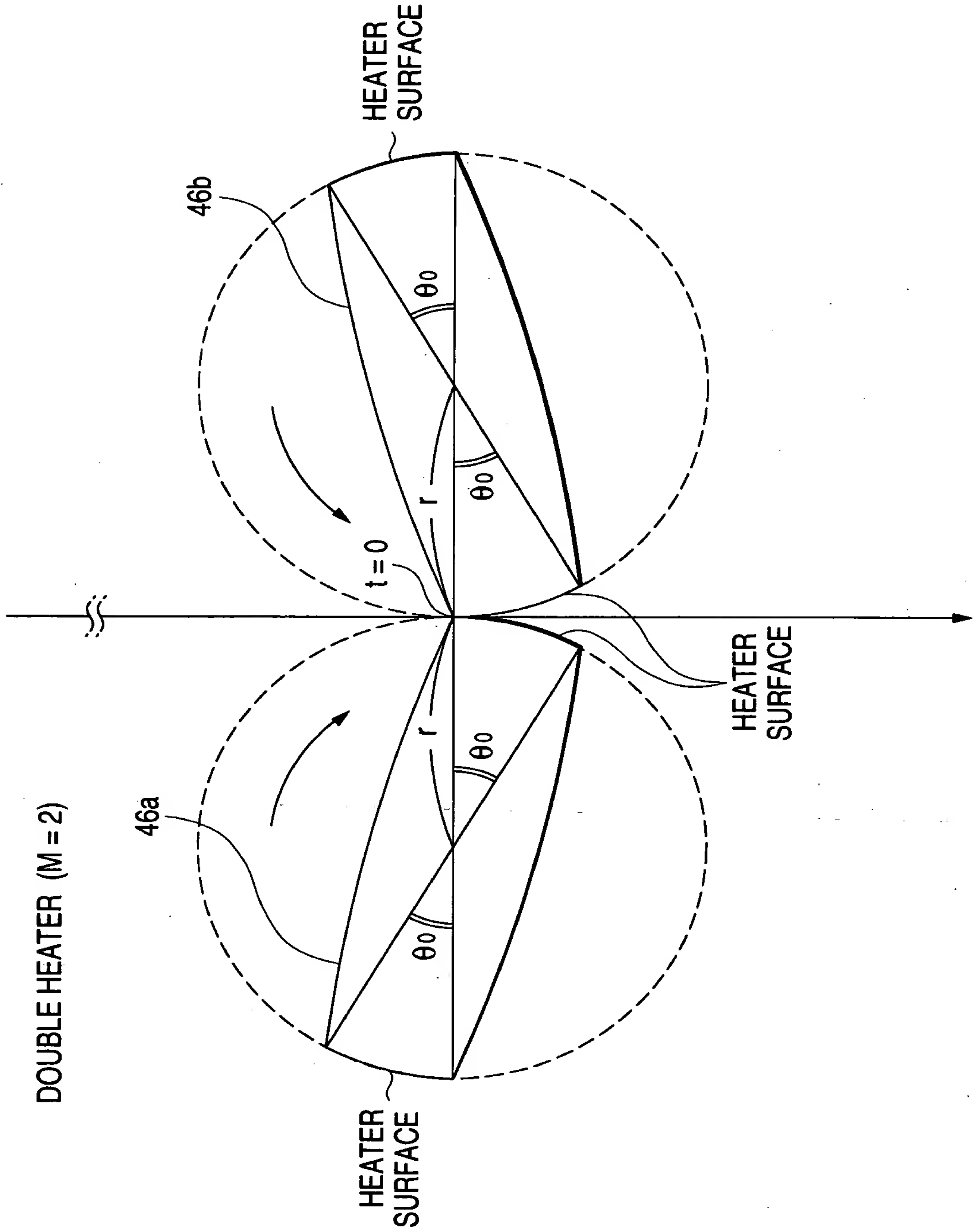
DOUBLE HEATER (M=2)
HEATER SURFACE
46b
θ0
θ0
r
t=0
HEATER SURFACE
r
θ0
46a
θ0
HEATER SURFACE

FIG. 18A

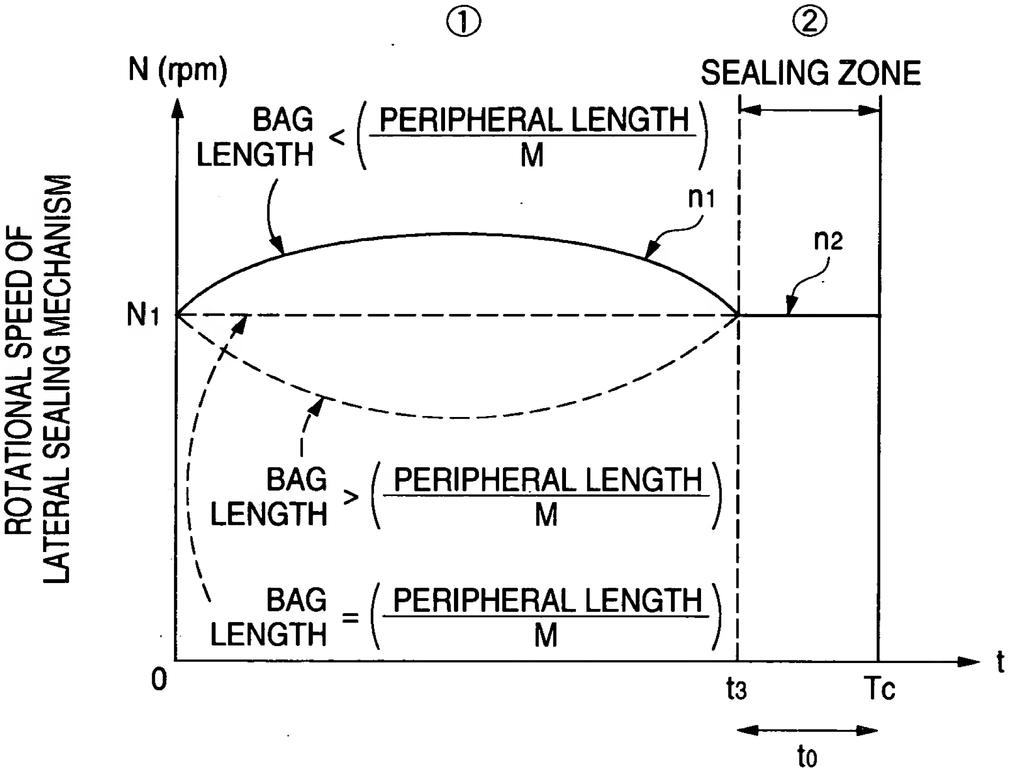

FIG. 18B

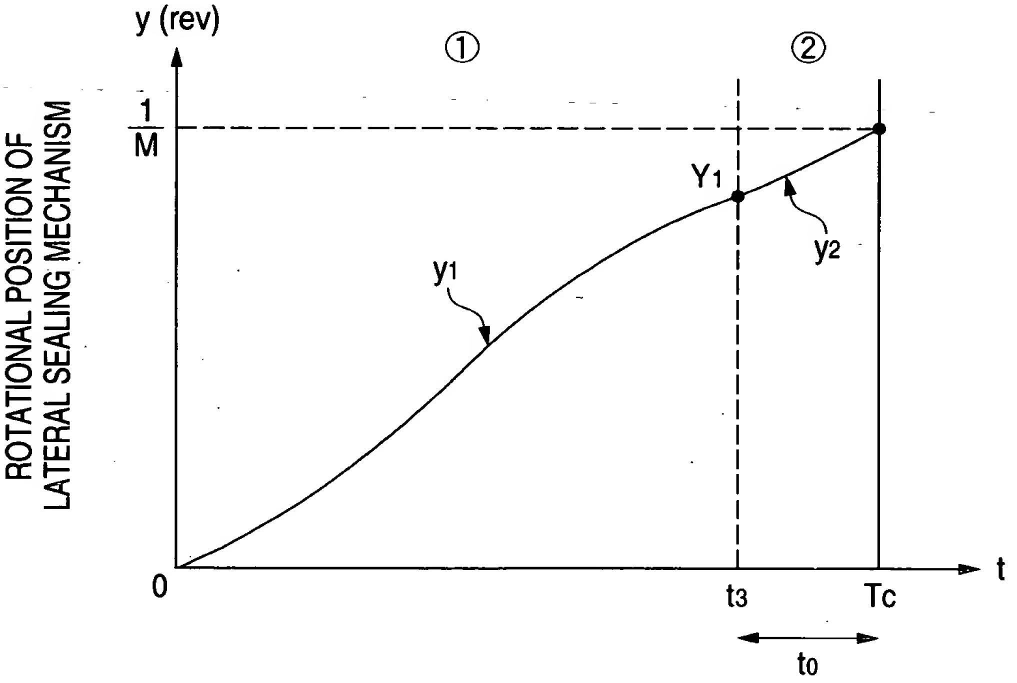

FIG. 19

ZONE	ROTATIONAL SPEED OF LATERAL SEALING MECHANISM n (rpm)	ROTATIONAL POSITION OF LATERAL SEALING MECHANISM y (rev)
① NON SEALIING ZONE	$n_1 = 60\,(3At^2 + 2Bt + C)$	$y_1 = At^3 + Bt^2 + Ct + D$
② SEALIING ZONE	$n_2 = N_1$ (CONSTANT)	$y_2 = \dfrac{\frac{1}{M} - Y_1}{Tc - t_3}\,(t - Tc) + \dfrac{1}{M}$

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FIG. 20

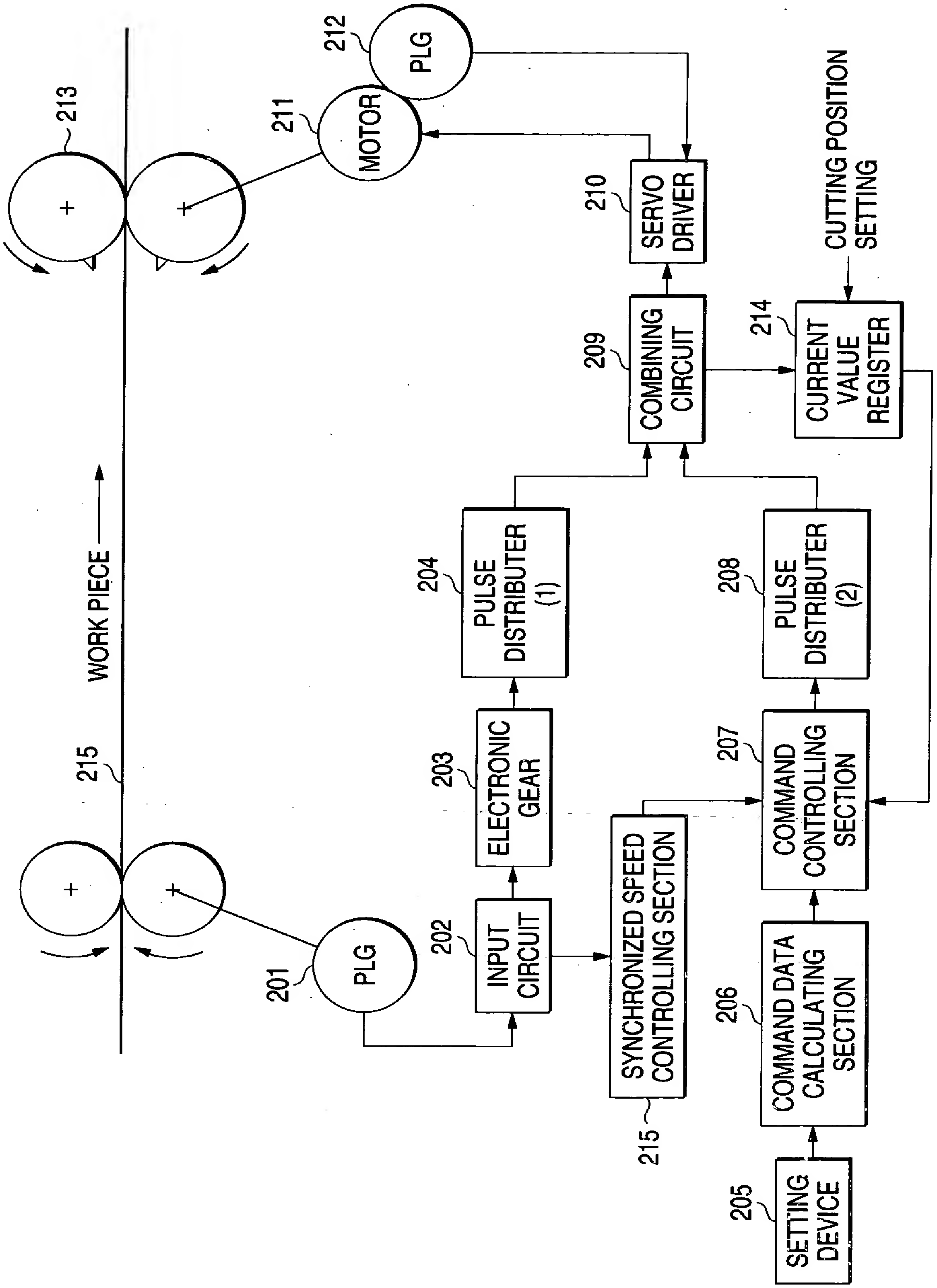

FIG. 21A

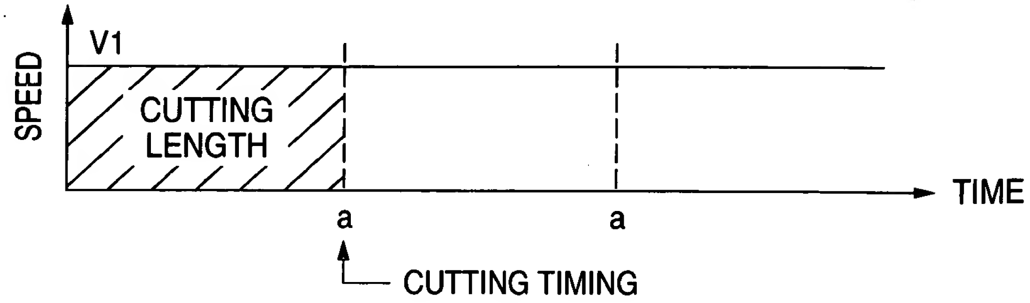

FIG. 21B

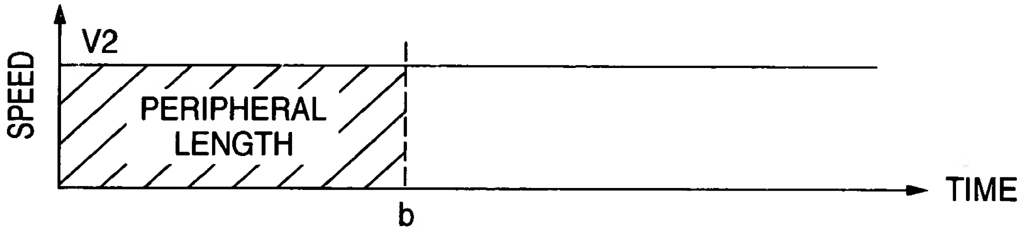

FIG. 21C

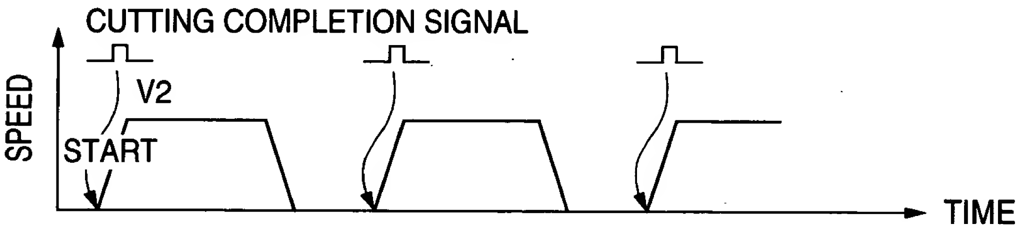

FIG. 21D

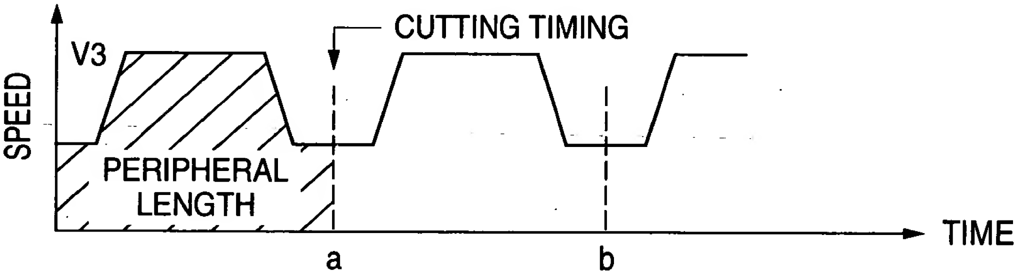

FIG. 21E

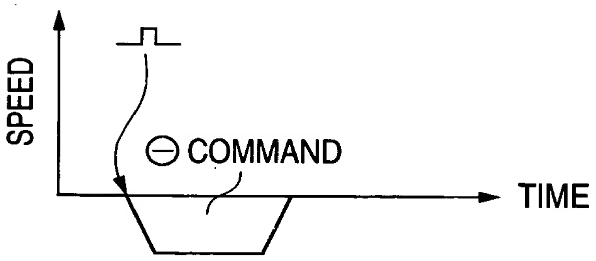

FIG. 21F

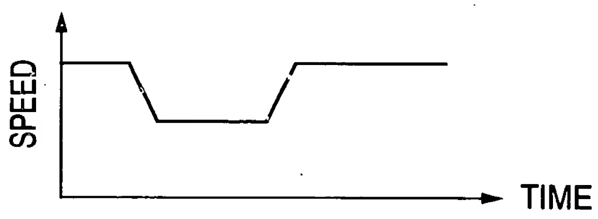

FIG. 22

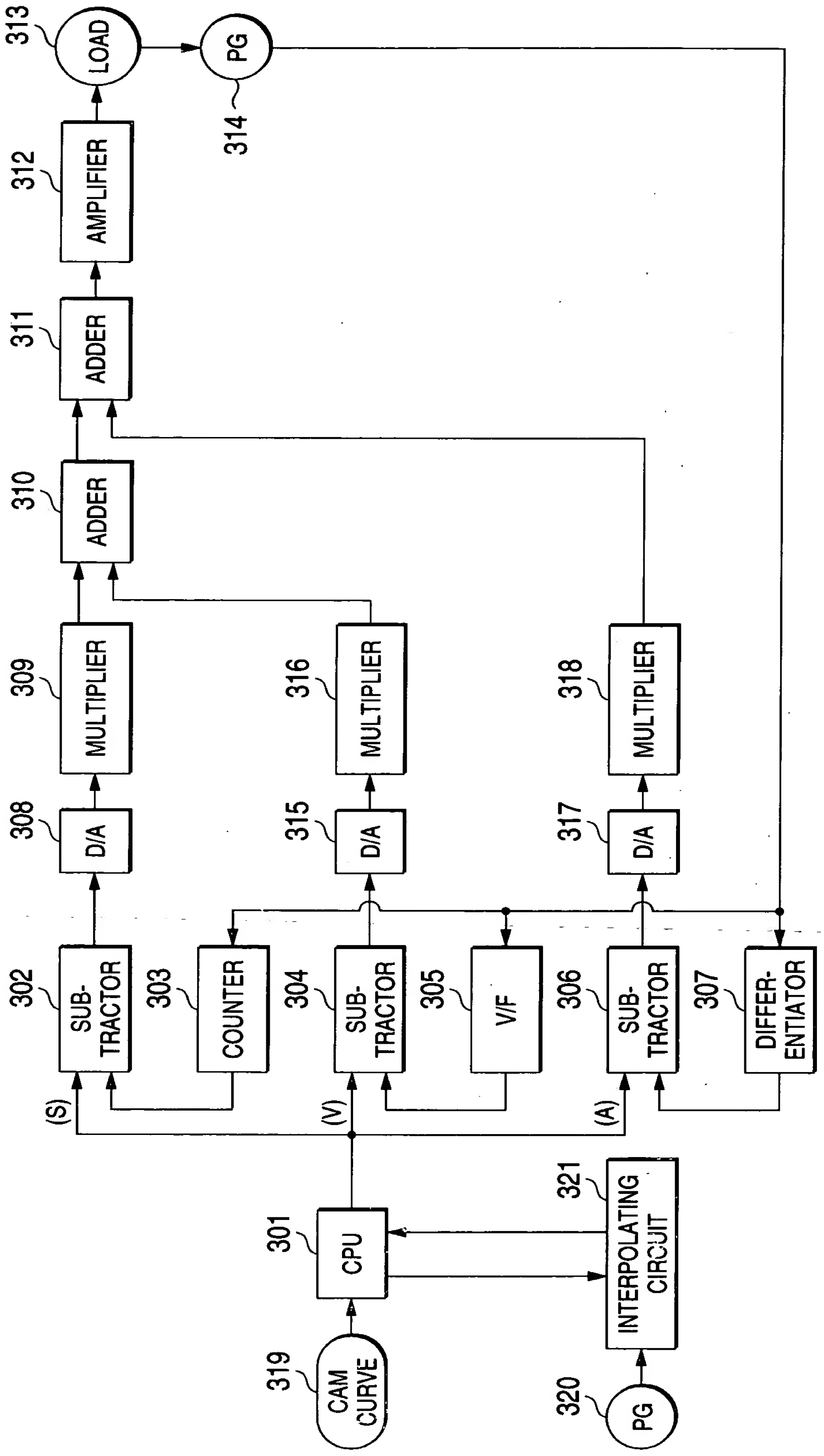
313
LOAD
PG
314
312
AMPLIFIER
311
ADDER
310
ADDER
309
MULTIPLIER
316
MULTIPLIER
318
MULTIPLIER
308
D/A
315
D/A
317
D/A
302
SUB-TRACTOR
303
COUNTER
304
SUB-TRACTOR
305
V/F
306
SUB-TRACTOR
307
DIFFER-ENTIATOR
(S)
(V)
(A)
301
CPU
321
INTERPOLATING CIRCUIT
319
CAM CURVE
320
PG

FIG. 23

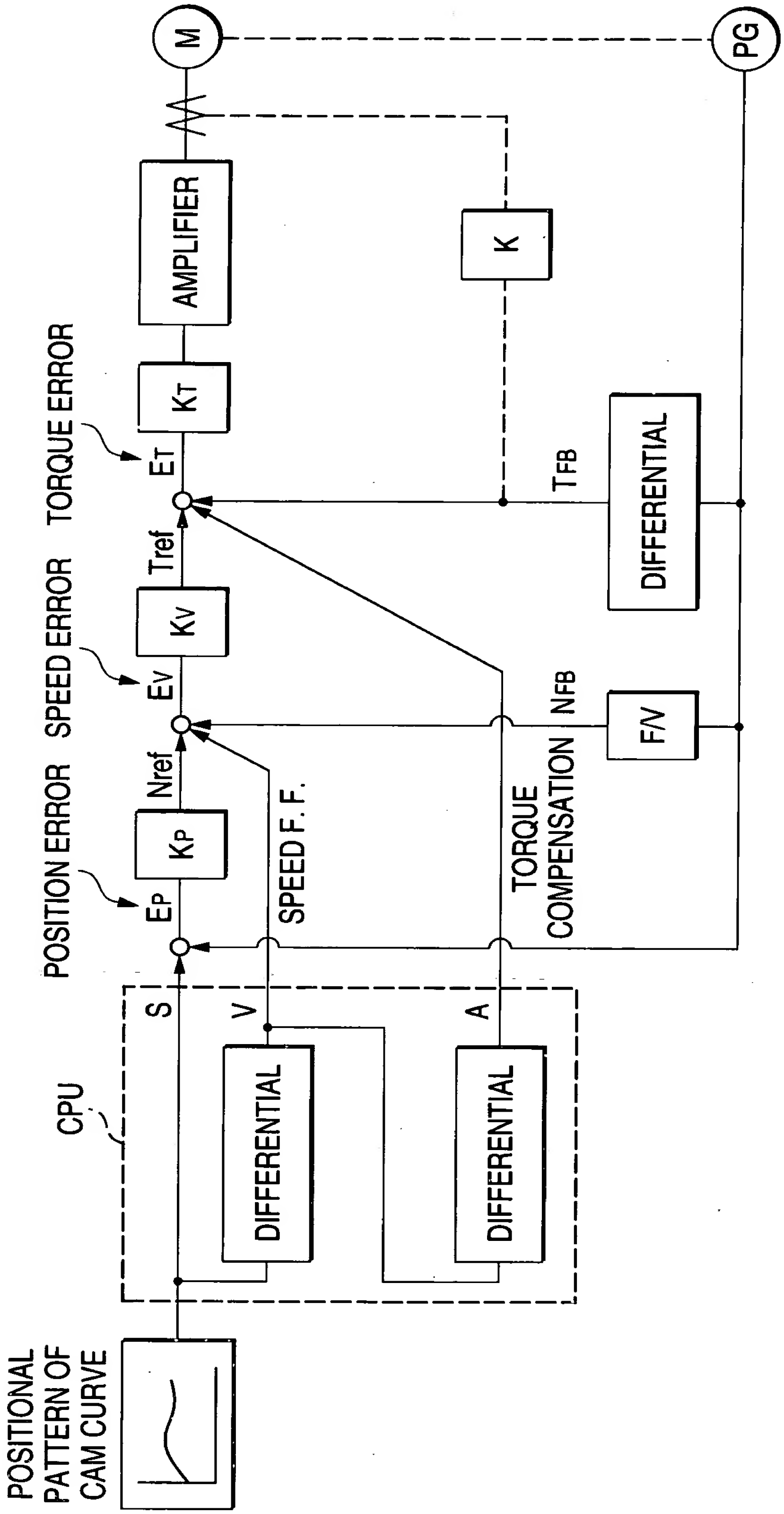
POSITIONAL PATTERN OF CAM CURVE
CPU
DIFFERENTIAL
DIFFERENTIAL
S
V
A
POSITION ERROR
E_P
K_P
Nref
SPEED F. F.
SPEED ERROR
E_V
K_V
Tref
TORQUE COMPENSATION
TORQUE ERROR
E_T
K_T
AMPLIFIER
M
K
N_{FB}
F/V
T_{FB}
DIFFERENTIAL
PG

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FIG. 24A

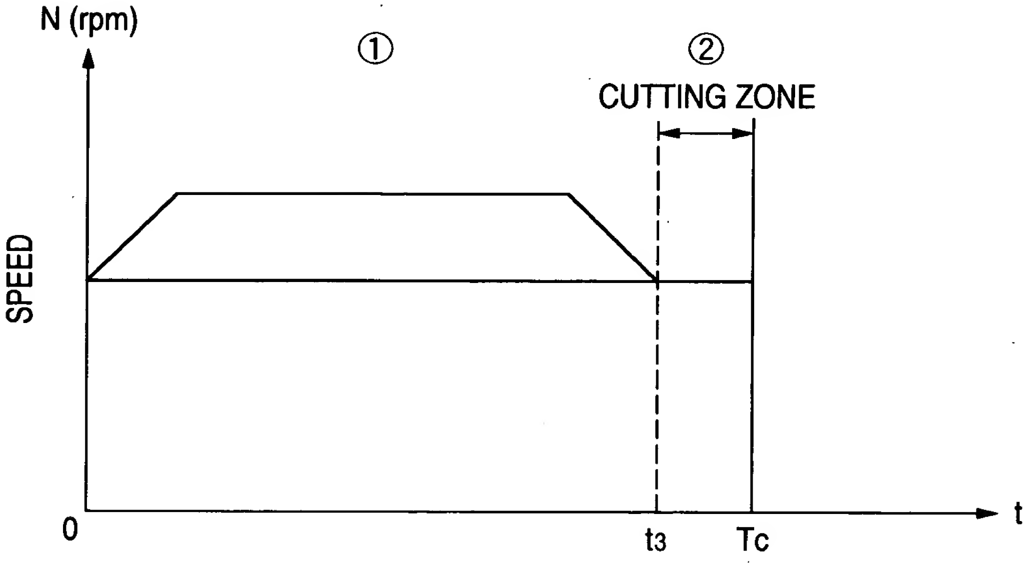

FIG. 24B